

SEQUENCE LISTING

<110> Donoho, Gregory
 Hilbun, Erin
 Scoville, John
 Turner, C. Alexander Jr.
 Friedrich, Glenn
 Abuin, Alejandro
 Zambrowicz, Brian
 Sands, Arthur T.

<120> Novel Human Enzymes and Polynucleotides
 Encoding the Same

<130> LEX-0118-USA

<150> US 60/179,000

<151> 2000-01-28

<160> 15

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 831

<212> DNA

<213> Homo sapiens

<400> 1

atgacctctt	tccgcttggc	cctcatccag	cttcagattt	cttccatcaa	atcagataac	60
gtcactcgcg	ctttagtctt	catccgggag	gcagcaacgc	aaggagccaa	aatagtttct	120
ttgccggaat	gctttaattc	tccatatgga	gcgaaatatt	ttcctgaata	tcagagagaaa	180
attcctgggtg	aatccacaca	gaagctttct	gaagtagcaa	aggaatgcag	catatatctc	240
attggaggct	ctatccctga	agaggatgct	gggaaattat	ataacacctg	tgctgtgttt	300
gggcctgatg	gaactttact	agcaaagtat	agaaagatcc	atctgtttga	cattgatgtt	360
cctggaaaaa	ttacatttca	agaatctaaa	acattgagtc	cgggtgatag	tttctccaca	420
tttgatactc	cttactgcag	agtgggtctg	ggcatctgct	acgacatgcg	gtttgcagag	480
cttgcacaaa	tctacgcaca	gagaggctgc	cagctgttgg	tatatccagg	agcttttaat	540
ctgaccactg	gaccagccca	ttgggagtta	cttcagcgaa	gccgggctgt	tgataatcag	600
gtgtatgtgg	ccacagcctc	tcctgcccg	gatgacaaag	cctcctatgt	tgctggggga	660
cacagcaccg	tggtgaaccc	ttggggggag	gttctagcca	aagctggcac	agaagaagca	720
atcgtgtatt	cagacataga	cctgaagaag	ctggctgaaa	tacgccagca	aatccccgtt	780
tttagacaga	agcgatcaga	cctctatgct	gtggagatga	aaaagcccta	a	831

<210> 2

<211> 276

<212> PRT

<213> Homo sapiens

<400> 2

Met	Thr	Ser	Phe	Arg	Leu	Ala	Leu	Ile	Gln	Leu	Gln	Ile	Ser	Ser	Ile
1			5				10				15				
Lys	Ser	Asp	Asn	Val	Thr	Arg	Ala	Cys	Ser	Phe	Ile	Arg	Glu	Ala	Ala
			20				25				30				
Thr	Gln	Gly	Ala	Lys	Ile	Val	Ser	Leu	Pro	Glu	Cys	Phe	Asn	Ser	Pro

35 40 45
 Tyr Gly Ala Lys Tyr Phe Pro Glu Tyr Ala Glu Lys Ile Pro Gly Glu
 50 55 60
 Ser Thr Gln Lys Leu Ser Glu Val Ala Lys Glu Cys Ser Ile Tyr Leu
 65 70 75 80
 Ile Gly Gly Ser Ile Pro Glu Glu Asp Ala Gly Lys Leu Tyr Asn Thr
 85 90 95
 Cys Ala Val Phe Gly Pro Asp Gly Thr Leu Leu Ala Lys Tyr Arg Lys
 100 105 110
 Ile His Leu Phe Asp Ile Asp Val Pro Gly Lys Ile Thr Phe Gln Glu
 115 120 125
 Ser Lys Thr Leu Ser Pro Gly Asp Ser Phe Ser Thr Phe Asp Thr Pro
 130 135 140
 Tyr Cys Arg Val Gly Leu Gly Ile Cys Tyr Asp Met Arg Phe Ala Glu
 145 150 155 160
 Leu Ala Gln Ile Tyr Ala Gln Arg Gly Cys Gln Leu Leu Val Tyr Pro
 165 170 175
 Gly Ala Phe Asn Leu Thr Thr Gly Pro Ala His Trp Glu Leu Leu Gln
 180 185 190
 Arg Ser Arg Ala Val Asp Asn Gln Val Tyr Val Ala Thr Ala Ser Pro
 195 200 205
 Ala Arg Asp Asp Lys Ala Ser Tyr Val Ala Trp Gly His Ser Thr Val
 210 215 220
 Val Asn Pro Trp Gly Glu Val Leu Ala Lys Ala Gly Thr Glu Glu Ala
 225 230 235 240
 Ile Val Tyr Ser Asp Ile Asp Leu Lys Lys Leu Ala Glu Ile Arg Gln
 245 250 255
 Gln Ile Pro Val Phe Arg Gln Lys Arg Ser Asp Leu Tyr Ala Val Glu
 260 265 270
 Met Lys Lys Pro
 275

<210> 3
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 3
 atgtcatgga ggatttcccc tgccacacca tgctgtaggg agttaacttt tcatttgtgc 60
 attttctggt tggaacacgc ttactgcaga gtgggtctgg gcatctgcta cgacatgcgg 120
 ttgacagagc ttgcacaaat ctacgcacag agaggctgcc agctgttggt atatccagga 180
 gcttttaatc tgaccactgg accagcccat tgggagttac ttcagcgaag ccgggctggt 240
 gataatcagg tgtatgtggc cacagcctct cctgcccggg atgacaaagc ctctatggt 300
 gcctggggac acagcaccgt ggtgaaccct tggggggagg ttctagccaa agctggcaca 360
 gaagaagcaa tcgtgtattc agacatagac ctgaagaagc tggctgaaat acgccagcaa 420
 atccccgttt ttagacagaa gcgatcagac ctctatgctg tggagatgaa aaagccctaa 480

<210> 4
 <211> 159
 <212> PRT
 <213> Homo sapiens

<400> 4
 Met Ser Trp Arg Ile Ser Pro Ala Thr Pro Cys Cys Arg Glu Leu Thr
 1 5 10 15
 Phe His Leu Cys Ile Phe Cys Leu Glu Thr Ala Tyr Cys Arg Val Gly

	20		25		30
Leu Gly Ile Cys Tyr Asp Met Arg Phe Ala Glu Leu Ala Gln Ile Tyr					
35			40		45
Ala Gln Arg Gly Cys Gln Leu Val Tyr Pro Gly Ala Phe Asn Leu					
50		55		60	
Thr Thr Gly Pro Ala His Trp Glu Leu Leu Gln Arg Ser Arg Ala Val					
65		70		75	80
Asp Asn Gln Val Tyr Val Ala Thr Ala Ser Pro Ala Arg Asp Asp Lys					
	85		90		95
Ala Ser Tyr Val Ala Trp Gly His Ser Thr Val Val Asn Pro Trp Gly					
	100		105		110
Glu Val Leu Ala Lys Ala Gly Thr Glu Glu Ala Ile Val Tyr Ser Asp					
	115		120		125
Ile Asp Leu Lys Lys Leu Ala Glu Ile Arg Gln Gln Ile Pro Val Phe					
	130		135		140
Arg Gln Lys Arg Ser Asp Leu Tyr Ala Val Glu Met Lys Lys Pro					
145		150		155	

<210> 5
 <211> 366
 <212> DNA
 <213> Homo sapiens

<400> 5	
atgcggtttg cagagcttgc acaaatctac gcacagagag gctgccagct gttggtatat	60
ccaggagctt ttaatctgac cactggacca gccattggg agttacttca gcgaagccgg	120
gctgttgata atcaggtgta tgtggccaca gcctctcctg cccgggatga caaagcctcc	180
tatgttgcct ggggacacag caccgtggtg aacccttggg gggaggttct agccaaagct	240
ggcacagaag aagcaatcgt gtattcagac atagacctga agaagctggc tgaaatacgc	300
cagcaaatcc ccgtttttag acagaagcga tcagacctct atgctgtgga gatgaaaaag	360
ccctaa	366

<210> 6
 <211> 121
 <212> PRT
 <213> Homo sapiens

<400> 6	
Met Arg Phe Ala Glu Leu Ala Gln Ile Tyr Ala Gln Arg Gly Cys Gln	
1	5 10 15
Leu Leu Val Tyr Pro Gly Ala Phe Asn Leu Thr Thr Gly Pro Ala His	
	20 25 30
Trp Glu Leu Leu Gln Arg Ser Arg Ala Val Asp Asn Gln Val Tyr Val	
	35 40 45
Ala Thr Ala Ser Pro Ala Arg Asp Asp Lys Ala Ser Tyr Val Ala Trp	
	50 55 60
Gly His Ser Thr Val Val Asn Pro Trp Gly Glu Val Leu Ala Lys Ala	
65	70 75 80
Gly Thr Glu Glu Ala Ile Val Tyr Ser Asp Ile Asp Leu Lys Lys Leu	
	85 90 95
Ala Glu Ile Arg Gln Gln Ile Pro Val Phe Arg Gln Lys Arg Ser Asp	
	100 105 110
Leu Tyr Ala Val Glu Met Lys Lys Pro	
	115 120

<210> 7

<211> 507
 <212> DNA
 <213> Homo sapiens

<400> 7
 atgtcatgga ggatttcccc tgccacacca tgetgtaggg agttaacttt tcatttgtgc 60
 attttctgtt tggaacacag ttactgcaga gtgggtctgg gcatctgcta cgacatgcgg 120
 tttgcagagc ttgcacaaat ctacgcacag agaggctgcc agctgttggt atatccagga 180
 gcttttaatc tgaccactgg accagcccat tgggagttac ttcagcgaag ccgggctggt 240
 gataatcagg tgtatgtggc cacagcctct cctgcccggg atgacaaagc ctctatgtt 300
 gcctggggac acagcaccgt ggtgaaccct tggggggagg ttctagccaa agctggcaca 360
 gaagaagcaa tcgtgtattc agacatagac ctgaagaagc tggctgaaat acgccagcaa 420
 atccccgttt ttagacagaa gcgaaatatt ttctgaata tgcagagaaa attctggtg 480
 aatccacaca gaagctttct gaagtag 507

<210> 8
 <211> 168
 <212> PRT
 <213> Homo sapiens

<400> 8
 Met Ser Trp Arg Ile Ser Pro Ala Thr Pro Cys Cys Arg Glu Leu Thr
 1 5 10 15
 Phe His Leu Cys Ile Phe Cys Leu Glu Thr Ala Tyr Cys Arg Val Gly
 20 25 30
 Leu Gly Ile Cys Tyr Asp Met Arg Phe Ala Glu Leu Ala Gln Ile Tyr
 35 40 45
 Ala Gln Arg Gly Cys Gln Leu Val Tyr Pro Gly Ala Phe Asn Leu
 50 55 60
 Thr Thr Gly Pro Ala His Trp Glu Leu Leu Gln Arg Ser Arg Ala Val
 65 70 75 80
 Asp Asn Gln Val Tyr Val Ala Thr Ala Ser Pro Ala Arg Asp Asp Lys
 85 90 95
 Ala Ser Tyr Val Ala Trp Gly His Ser Thr Val Val Asn Pro Trp Gly
 100 105 110
 Glu Val Leu Ala Lys Ala Gly Thr Glu Glu Ala Ile Val Tyr Ser Asp
 115 120 125
 Ile Asp Leu Lys Lys Leu Ala Glu Ile Arg Gln Gln Ile Pro Val Phe
 130 135 140
 Arg Gln Lys Arg Asn Ile Phe Leu Asn Met Gln Arg Lys Phe Leu Val
 145 150 155 160
 Asn Pro His Arg Ser Phe Leu Lys
 165

<210> 9
 <211> 393
 <212> DNA
 <213> Homo sapiens

<400> 9
 atgcggtttg cagagcttgc acaaactctac gcacagagag gctgccagct gttggtatat 60
 ccaggagctt ttaatctgac cactggacca gccattggg agttacttca gcgaagccgg 120
 gctgttgata atcaggtgta tgtggccaca gcctctcttg cccgggatga caaagcctcc 180
 tatgttgctt ggggacacag caccgtggtg aacccttggg gggaggttct agccaaagct 240
 ggcacagaag aagcaatcgt gtattcagac atagacctga agaagctggc tgaaatacgc 300
 cagcaaatcc ccgttttttag acagaagcga aatattttcc tgaatatgca gagaaaattc 360

ctggtgaatc cacacagaag ctttctgaag tag

393

<210> 10

<211> 130

<212> PRT

<213> Homo sapiens

<400> 10

```
Met Arg Phe Ala Glu Leu Ala Gln Ile Tyr Ala Gln Arg Gly Cys Gln
 1          5          10          15
Leu Leu Val Tyr Pro Gly Ala Phe Asn Leu Thr Thr Gly Pro Ala His
 20          25          30
Trp Glu Leu Leu Gln Arg Ser Arg Ala Val Asp Asn Gln Val Tyr Val
 35          40          45
Ala Thr Ala Ser Pro Ala Arg Asp Asp Lys Ala Ser Tyr Val Ala Trp
 50          55          60
Gly His Ser Thr Val Val Asn Pro Trp Gly Glu Val Leu Ala Lys Ala
 65          70          75          80
Gly Thr Glu Glu Ala Ile Val Tyr Ser Asp Ile Asp Leu Lys Lys Leu
 85          90          95
Ala Glu Ile Arg Gln Gln Ile Pro Val Phe Arg Gln Lys Arg Asn Ile
100          105          110
Phe Leu Asn Met Gln Arg Lys Phe Leu Val Asn Pro His Arg Ser Phe
115          120          125
Leu Lys
130
```

<210> 11

<211> 459

<212> DNA

<213> Homo sapiens

<400> 11

```
atgacctctt tccgcttggc cctcatccag cttcagattt cttccatcaa atcagataac      60
gtcactcgcg cttgtagctt catccgggag gcagcaacgc aaggagccaa aatagtttct      120
ttgcgcgaat gctttaattc tocatatgga gcgaaatatt ttcctgaata tgcagagaaa      180
attcctggtg aatccacaca gaagctttct gaagtagcaa aggaatgcag catatatctc      240
attggaggct ctatcctga agaggatgct gggaaattat ataacacctg tgctgtgttt      300
gggctgatg gaactttact agcaaagtat agaaagatcc atctgtttga cattgatgtt      360
cctggaaaaa ttacatttca agaattctaaa acattgagtc cgggtgatag tttctccaca      420
tttgatactc gtatgtacca gataagtttg cctctttag      459
```

<210> 12

<211> 152

<212> PRT

<213> Homo sapiens

<400> 12

```
Met Thr Ser Phe Arg Leu Ala Leu Ile Gln Leu Gln Ile Ser Ser Ile
 1          5          10          15
Lys Ser Asp Asn Val Thr Arg Ala Cys Ser Phe Ile Arg Glu Ala Ala
 20          25          30
Thr Gln Gly Ala Lys Ile Val Ser Leu Pro Glu Cys Phe Asn Ser Pro
 35          40          45
Tyr Gly Ala Lys Tyr Phe Pro Glu Tyr Ala Glu Lys Ile Pro Gly Glu
 50          55          60
```

Ser Thr Gln Lys Leu Ser Glu Val Ala Lys Glu Cys Ser Ile Tyr Leu
65 70 75 80
Ile Gly Gly Ser Ile Pro Glu Glu Asp Ala Gly Lys Leu Tyr Asn Thr
85 90 95
Cys Ala Val Phe Gly Pro Asp Gly Thr Leu Leu Ala Lys Tyr Arg Lys
100 105 110
Ile His Leu Phe Asp Ile Asp Val Pro Gly Lys Ile Thr Phe Gln Glu
115 120 125
Ser Lys Thr Leu Ser Pro Gly Asp Ser Phe Ser Thr Phe Asp Thr Arg
130 135 140
Met Tyr Gln Ile Ser Leu Pro Leu
145 150

<210> 13
<211> 858
<212> DNA
<213> Homo sapiens

<400> 13
atgacctctt tccgcttggc cctcatccag cttcagattt cttccatcaa atcagataac 60
gtcactcgcg cttgtagctt catccgggag gcagcaacgc aaggagccaa aatagtttct 120
ttgccggaat gctttaattc tccatatgga gcgaaatatt ttcttgaata tgcagagaaa 180
attcctggtg aatccacaca gaagctttct gaagtagcaa aggaatgcag catatatctc 240
attggaggct ctatocctga agaggatgct gggaaattat ataacacctg tgcctgtgtt 300
gggcctgatg gaactttact agcaaagtat agaaagatcc atctgtttga cattgatgtt 360
cctggaaaaa ttacatttca agaatactaaa acattgagtc cgggtgatag tttctccaca 420
tttgatactc cttactgcag agtgggtctg ggcactctgct acgacatgcg gtttgcagag 480
cttgacacaaa tctacgcaca gagaggctgc cagctgttgg tatatccagg agcttttaat 540
ctgaccactg gaccagccca ttgggagtta cttcagcgaa gccgggctgt tgataatcag 600
gtgtatgttg ccacagcctc tctgcccgg gatgacaaag cctcctatgt tgcctgggga 660
cacagcaccg tgggtgaaccc ttggggggag gttctagcca aagctggcac agaagaagca 720
atcgtgtatt cagacataga cctgaagaag ctggctgaaa tacgccagca aatccccgtt 780
tttagacaga agcgaaatat tttcctgaat atgcagagaa aattcctggt gaatccacac 840
agaagctttc tgaagtag 858

<210> 14
<211> 285
<212> PRT
<213> Homo sapiens

<400> 14
Met Thr Ser Phe Arg Leu Ala Leu Ile Gln Leu Gln Ile Ser Ser Ile
1 5 10 15
Lys Ser Asp Asn Val Thr Arg Ala Cys Ser Phe Ile Arg Glu Ala Ala
20 25 30
Thr Gln Gly Ala Lys Ile Val Ser Leu Pro Glu Cys Phe Asn Ser Pro
35 40 45
Tyr Gly Ala Lys Tyr Phe Pro Glu Tyr Ala Glu Lys Ile Pro Gly Glu
50 55 60
Ser Thr Gln Lys Leu Ser Glu Val Ala Lys Glu Cys Ser Ile Tyr Leu
65 70 75 80
Ile Gly Gly Ser Ile Pro Glu Glu Asp Ala Gly Lys Leu Tyr Asn Thr
85 90 95
Cys Ala Val Phe Gly Pro Asp Gly Thr Leu Leu Ala Lys Tyr Arg Lys
100 105 110
Ile His Leu Phe Asp Ile Asp Val Pro Gly Lys Ile Thr Phe Gln Glu

115	120	125
Ser Lys Thr Leu Ser Pro Gly Asp Ser Phe Ser Thr Phe Asp Thr Pro		
130	135	140
Tyr Cys Arg Val Gly Leu Gly Ile Cys Tyr Asp Met Arg Phe Ala Glu		
145	150	155
Leu Ala Gln Ile Tyr Ala Gln Arg Gly Cys Gln Leu Leu Val Tyr Pro		
165	170	175
Gly Ala Phe Asn Leu Thr Thr Gly Pro Ala His Trp Glu Leu Leu Gln		
180	185	190
Arg Ser Arg Ala Val Asp Asn Gln Val Tyr Val Ala Thr Ala Ser Pro		
195	200	205
Ala Arg Asp Asp Lys Ala Ser Tyr Val Ala Trp Gly His Ser Thr Val		
210	215	220
Val Asn Pro Trp Gly Glu Val Leu Ala Lys Ala Gly Thr Glu Glu Ala		
225	230	235
Ile Val Tyr Ser Asp Ile Asp Leu Lys Lys Leu Ala Glu Ile Arg Gln		
245	250	255
Gln Ile Pro Val Phe Arg Gln Lys Arg Asn Ile Phe Leu Asn Met Gln		
260	265	270
Arg Lys Phe Leu Val Asn Pro His Arg Ser Phe Leu Lys		
275	280	285

<210> 15
 <211> 3093
 <212> DNA
 <213> Homo sapiens

<400> 15

ggatggtggg	gcatacctgt	ggtcccagct	acataagagg	ctgagacaag	aggattgcct	60
gaactgagta	ggtcaaggct	gcagtggacc	atgtttgtgc	cactgcactc	cagcctgggc	120
gacagaacaa	ggccctgcct	caaaataaaa	aatattagct	aatggaaagt	gattatcata	180
aaagctaaaa	gggaacttta	aagaacagaa	gaaaagcaaa	tatgatgtat	agctactacc	240
tccaggaaga	aataagcttg	gaagagcccc	caacctcctt	gctccagggc	tgagcacaga	300
ccttgctcagg	gctggctaca	taatttgtgg	ggcccagttc	ccttgttcag	atagcaagag	360
aaaagtgtctg	ttagcttttc	cttctgcagt	atctctttca	acctctcatg	gtgttatttg	420
ctgttttaatg	tcatgttctc	ttggacacat	gaatacttat	gggtaagtgt	cagactttta	480
gaggtgcctg	ggaccctgt	cctgtgaata	ggcatgtgtg	cagctcactg	gctgccaggt	540
tttccctctg	ccagcagcgg	gatcgatgtg	ctgtgaccca	gccagtagtg	gggaaactga	600
gacagacatc	ttcccttccc	atgagctggg	cctgctcatg	ggaattatgt	gagcagcttc	660
caaggaatca	cactttctgt	gctgggacat	actcaagtat	atggattgga	ggtagacgag	720
aggcccattg	aacaaacagt	aaggacag	accatattca	aacccagtct	ttttacttta	780
agccatatct	ctcatttcat	tcccctacac	tgcgtagtaa	gaagctgggt	cactctagat	840
tcttggtgct	ggcatgggac	tttgcccatg	gatattgctc	tatctccaga	tagattttag	900
actattgaca	ttttggacag	gataattctt	cgttgtgtta	tggagggggg	tgctctatgc	960
attgtaggat	gtttggcagt	atccttggtc	tctattcatt	agatgccact	catacctcat	1020
cagttgtggc	atcaaaggta	tcttcagaca	ttgtcagatg	tcccccgagg	gacataactg	1080
ccttccattt	gagaactatg	gctctgtctg	aatccagcag	ttcgatcttc	tgatagctgt	1140
tttcttttgt	ctttgttctc	agcccccccc	cccccggtag	gacccgagg	ccgccggatc	1200
tccagcgctc	agtcgcgcgc	gcaggtgggt	cttgtctgca	gagtcatgac	ctctttccgc	1260
ttggccctca	tccagcttca	gatttcttcc	atcaaatacag	ataacgtcac	tcgcgcttgt	1320
agcttcatcc	gggaggcagc	aacgcaagga	gcaaaaatag	tttctttgcc	ggaatgcttt	1380
aattctccat	atggagcgaa	atattttcct	gaatatgcag	agaaaattcc	tggtgaatcc	1440
acacagaagc	tttctgaagt	agcaaaggaa	tgcagcatat	atctcattgg	aggctctatc	1500
cctgaagagg	atgctgggaa	attatataac	acctgtgctg	tgtttggggc	tgatggaact	1560
ttactagcaa	agtatagaaa	gatccatctg	tttgacattg	atgttcctgg	aaaaattaca	1620
tttcaagaat	ctaaaacatt	gagtcgggtg	gatagtttct	ccacatttga	tactcgtatg	1680

taccagataa	gtttgcctct	ttagcaatct	cagtagaaga	caatcaggt	tttatttctt	1740
ttttgtctct	ctccgatttc	ttcacataac	ctaactgaaa	gaccataagt	gagaaaggca	1800
gagaatcatc	acagatctgg	aaagttcggg	cttatttgag	aactaaggat	ttgacacgat	1860
tttgcccttt	gatttgattg	tagcttcctg	ttacggcttc	cagagtatac	ctattaggct	1920
acagttgagt	acctcccatc	tagataataa	gcattcaatt	agaatgaatt	tctcatcttt	1980
actccgctga	tgtaaatgat	gtctttatga	gatgaagtcc	aagtaggaat	gagcttgtaa	2040
attatctctg	tcctcaggtc	ctgtgttaat	ttatccctgt	cagtgttttg	tgatcattat	2100
gtcatggagg	atttccccctg	ccacaccatg	ctgtaggagg	ttaacttttc	atttgtgcat	2160
tttctgtttg	gaaacagctt	actgcagagt	gggtctgggc	atctgctacg	acatgcgggt	2220
tgagagagct	gcacaaatct	acgcacagag	aggctgccag	ctggttggtat	atccaggagc	2280
ttttaatctg	accactggac	cagcccattg	ggagttactt	cagcgaagcc	gggctgttga	2340
taatcagggtg	tatgtggcca	cagcctctcc	tgcccgggat	gacaaagcct	cctatgttgc	2400
ctggggacac	agcaccgtgg	tgaacccttg	gggggagggt	ctagccaaag	ctggcacaga	2460
agaagcaatc	gtgtattcag	acatagacct	gaagaagctg	gctgaaatac	gccagcaaat	2520
cccgtttttt	agacagaagc	gatcagacct	ctatgctgtg	gagatgaaaa	agccctaaag	2580
tttatgtttc	taatgtgtca	cagaatagga	cgatatgatt	ctacaacata	atcaactccc	2640
tattaaatc	tttaatgaag	aaaaaaaaa	aaaaaaaaa	aaaaaatatt	ttcctgaata	2700
tgagagagaaa	attcctgggtg	aatccacaca	gaagctttct	gaagtagcaa	aggaatgcag	2760
catatactct	attggaggct	ctatccctga	agaggatgct	gggaaattat	ataacacctg	2820
tgctgtgttt	gggcctgatg	gaactttact	agcaaagtat	agaaagatcc	atctgtttga	2880
cattgatgtt	cctggaaaaa	ttacatttca	agaatctaaa	acattgagtc	cgggtgatag	2940
tttctccaca	tttgatactc	cttactgcag	agtgggtctg	ggcatctgct	acgacatgcg	3000
gtttgcagag	cttgcacaaa	tctacgcaca	gagaggctgc	cagctgttgg	tatatccagg	3060
agcttttaat	ctgaccactg	gaccagccca	ttg			3093